

# 432 MHz AND ABOVE EME NEWS

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## CONDITIONS

The big news this month is what I believe is the 1st 432 BY EME QSO. The contact was made by WA4NJP with BY4BJA in the beginning of May. Details are in Ray's report.

Conditions on 70 cm were not that good during the end of April SW. Many stations were on 23 cm or 3 cm for the 2nd part of the REF/DUBUS Contest and high solar activity appears to have again affected 432 moon the propagation. The sun was not a problem on 1296 and 3 cm where conditions were good and relative activity high especially on 3 cm, which is reaching a level where it is starting to affect the turnout on 1296. This shows the need for a separate contest or contests for the microwave EME bands.

**W7HAH IS AN SK:** I am sorry to have to report that W7HAH is a silent key. Shep passed away in his sleep. He struggled against a growing list of infirmities these last many months. Despite his problems one of Shep's last concerns was to provide MT to as many stations as possible before he went QRT. TNX Shep, we will all miss you.

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### [9H1ES](#)

Fortunado confirms QSOs during the contest on 1296 with K0YW (453), KA0Y (454). He feels his system is now operating very well. He did not hear W2UHI, but says that there were other stations near the frequency. He desires 23 cm skeds. Fortunado can only listen on 10 GHz with a 1.2 m dish.

### [AL7OB](#)

Mike < melum@customcpu.com > is still working on a long list of things to finish on his antenna project – My primary target is the AZ position indicator. The system seems to work quite well when I manage to get it aimed properly. I worked 34 stations (7 initials) in the 1st part of the REF/DUBUS Contest, 30 the 1st day and only 4 more the 2nd – primarily due to the intense solar activity. During the last SW (2nd part of contest) I was on 432 again. Overall the conditions were mediocre. I did work PA4FP (O/O) for initial #78, DK3WG (539/539) #79 – finally, we have been trying a long time, S52CW (539/539), DL8OBU (439/449), DJ6MB (549/549) #80, DL7APV (O/O) #81, G4YTL (439/O) #82, K1FO (559/559) and VK4AFL (559/559). Heard were PAØPLY, DL5LF and UA6LGH (O) but no completion. The lousy conditions aggravated my AZ readout problem as many times I was without echoes and could not determine

the correct position from them. Lots of Faraday, deep fading and sudden dropouts. I tried a 2 m feed but made no QSOs. I have pictures on my WEB site < <http://www.customcpu.com/al7ob>> of the new azimuth drive changes, under the "Status" link. I also posted my full contest log there. The AZ drive works great now. After the SW I picked up a couple more initials, including N1BUG on his single FO-22, K4AR (539/539), K6JEY (549/559) with his new 8938 amp and N9AB (559/559).

### **CT1DMK**

Luis was on 10 GHz during the contest weekend. He worked DL0EF, WA7CJO, F6KSX, and OK1UWA on random. Previously a sked with OK1UWA was not good, but they later had a good random QSO. Luis asks if OH2AXH was active on 10 GHz. [Yes].

### **DL0EF**

Manfred (PA3GLB/DL5FAB) and the rest of the crew of DL0EF (DL2KA, DF3GL, DD9ZL, DH9FAH, DH9FAG and others) send the following report on the clubs 3 cm EME contest results - - The Callsign is of the "Foerderverein Astropeiler Stockert", a club that refurbished the 1st German radiotelescope built in the 1950s, and practices amateur radio activities as well a amateur astronomy. More information including specific information on EME can be found on our WEB page at:

### **[AstroPeiler](#)**

We are planning to place samples of recorded EME signals from the contest and pictures of the activity on this page. DL0EF is located near the small medieval village of Bad Muenstereifel, not far from Cologne, in the hills of the Eifel. The DL0EF crew comes from Germany and the Netherlands. For that reason traveling was on 28 April and operation started at around 1200. As a result of 3 years of preparation, the contest started very smoothly without any technical problems. However, we were quite surprised to immediately hear several stations calling and worked 5 stations within the 1st hour of operation easily. The rest of the day brought 3 more stations and we hoped for some more skeds, specifically for 9H1EF via 20 m net. Conditions to Joe were difficult for us with only a dipole and a lots of Eur QRM. We were not able to access Internet from our location, hence we did not receive the up-dated net news from the 28th. Skeds stations were worked random with good signals prior to the sked times, other stations were not heard at all. Most it appears were actually not on the band. Our polarizer unit, which allows for separate continuous adjustment of the linear pol on TX and RX, brought big improvements on the signals, especially late in the evening with contacts to the US. Due to the polar mount of our dish, we needed to continuously correct pol. Later the polarizer unit broke - possibly due to overheating of the ferro-material by the transmit power. We need figure out how

to construct a new unit that will handle our TX power of up to 200 W. The 2nd day started with us looking for stations from the east. We hoped to hear some VK signals. The moon can be seen with almost 5 deg el, but then disaster happened when the dish unintentionally hit the ground. Luckily, no serious damage resulted and we continued to work/hear 5 more stations. A number of quite weak and unrecognized signals were recorded. WA7CJO was heard again with (559) on SSB and QSO'd a 2nd time. We also heard our own echoes strongly on SSB and tried to break-in to a QSO between WA7CJO and another US Station that we could not read. The last station was W5LUA. We then had to leave for home, each of us happy about the success and tired from almost 48 hours of activity and 3 years of preparation. Our thanks to all the stations worked during this weekend and to Joe who arranged most of the skeds. We are looking forward to the next occasion and to work those stations not yet contacted. DL0EF is planning a special 10 GHz EME Receive Event on 27/28 Oct with a transmit EIRP of 80 dBw, that should allow a moonbounce echo to be received by a small portable station. The stations worked/heard on 28 April were at 1205 OK1UWA (459/559), 1251 SM4DHN (559/539), 1256 OK1KIR (539/449), 1301 HB9BHU (559/549), 1309 F6KSX (559/449), 1712 DL2LAC (O/O), 1822 CT1DMK (O/O) and 1943 WA7CJO (559/559), and on 29 April at 1245 OH2AXH (O/O), 1432 LX1DB (559/549), 1903 WA7CJO (559/559), 1938 partial PA3AOH (559/-) and 2001 W5LUA (539/559).

#### **DL1YMK**

Michael is QRV on 23 cm EME I finally managed to get on the moon on 23 cm, just in time for the DUBUS Contest. I am using a 3.8 m dish (f/d 0.33), DJ9BV/DK2FD preamp with a 0.35 dB NF and 3 cm of UT141 to feed the monopole of a VE4MA type circular horn. I checked the set-up on Saturday before the contest and had a solar noise of 15.6 dB at an of SFI 160. I made my 1st 23 cm EME QSO on the following Sunday afternoon on sked with DJ9YW (549/449). I had only 75-80 W at the feed, QRP, but surprisingly I could hear my echoes at all times. In the contest with my QRP power, but managed to work HB9BBD, F2TU, HB9SV, SM3AKW, OE9XXI, OZ4MM, HB9Q, G3LTF, G4CCH, KA0Y, K4QI, K0YW, DK0ZAB, OK1KIR, LX1DB and OZ6OL for a score of 16x12 in about 7 hours of activity. I could have made many more QSOs as I heard quite a number of stations with reasonable signals, but when I called, I could not get through. More power is a must now for me. Of course, I will be available on sked weekends, so if anybody wants to give it a try with a QRP station, I'll be pleased to sked. I want to thank OE5JFL for providing his fantastic stand-alone moon tracking controller - and even more for answering patiently my questions how to make it work with a 2 axis EGIS rotator. Many thanks too to DJ9YW from whom I got the rotator and many valuable discussions. I am expanding my 70 cm array to 6 x 11 w/ BV yagis. Hopefully this will be finished by Aug. So after more than half a year of absence on 70, you may

also hear me again there with a better signal.

#### **DL4KG**

Gerald sends the latest news -- During the REF/DUBUS Contest on 31 April I worked on DL9NDD (559/559), HB9Q (559/559), OZ4MM (559/449), OH2DG (449/539) for initial #64, K5JL (549/439) #65, DL4MEA (439/O), K1FO (449/439), OE5EYM (559/449), K0RZ (449/449) and N9AB (549/449). Heard were DJ6MB, G4ERG, DL7APV (I think they called me) and UT3LL. Signal strengths changed very often and QSB was very deep. On Sunday the condx were very poor. Even the big guns were nearly wiped out. Due to a failure in my driver, I operated with my transverter directly driving my GS-23B PA (no driver amp), which gave 550 W output in shack. On 29 April my sked with AL7OB failed. I found a defective azimuth reading afterwards, I was never aimed at the moon. Until I repair/replace the rotator I will be not active off the moon.

#### **DL4MEA**

Guenter was on 1296 for the REF/DUBUS Contest -- For about 4 month I was intensively working to become QRV on 23 cm. The place where I live and my 70 cm EME shack are 70 km apart, about a 1 hour single way drive. So I wanted to try a just for fun possibility of EME from my home. The 70 cm array is too large for my home. The house is rented and the garden is not large enough. So I thought of 23 cm. While in Italy I picked up a 3 m dish. Christmas was a little bit earlier, when I received by chance an AZ/EL rotator intended to track weather satellites. It just had to be picked up about 50 km from my QTH! It proved to be a real find able to carry a balanced load of up to 2 tons in wind load. The displays were driven by 400 Hz resolvers. There was also a possibility of automatic tracking using stitched tapes with a resolution of 5 degrees. This control was the size of a small cupboard, and a little too much for my shack. So I had to remake the controls. After measuring the linearity of the resolvers and spending some thoughts how to connect them to processor, I decided to exchange them for digital resolvers. Again luck was with me, I found two equal incremental shaft encoders with 5000 slots, or 0.02 degs. The motors are driven with 6 solid state relays each and each axis has an Atmel AT89S8252 programmed in C. So both, AZ and EL drive are exchangeable and only differ in software. I decided to use Nova on a PC to calculate tracking data. This was the right decision, because its nice to click the object on the screen and see the dish moving into position. I planned to activate the dish for the contest. Since I am living in a rented house, the dish must be "portable". I made a quad leg standoff that carries the rotor, and I had to adapt the dish to the rotor with a 750mm/15mm thick steel disc. To minimize blockage, I chose a diagonal waveguide feed. I already had a 2 x 2C39 PA. And as I have a good PA for 13 cm I made a 2nd feed scaled for 13 cm. The feeds are located on a tube that is rotated by an old TV rotator much like a colt's magazine. I can easily change the feed while keeping the dish on target. With a

little more luck I was able to get access to a huge shipping container behind a company to use as a shack. My shack is much larger than what I have at home. My setup was DL4MEA/p at JN58jd, Langerringen, Germany, Gutenbergstraße 2 (about 500 m west from my 70 cm EME QTH). I measured 11 dB of sun noise which is definitely too small for this system, so there is still need for improvement, but nevertheless, it was a start. I had some start up problems. I got fine echoes and then immediately blew the preamp. Another problem was my DJ9BV power meter, which was not aligned for 23 cm. I knew that my PA is good for 200 W and I tried to get that from it. But my power meter only showed half, and so I drove the amp too much causing arcovers. After 25 fuses and 16 tubes, I found 4 working and put 2 of them in the amp. The tracking unit worked flawlessly. During the contest I worked OZ4MM, OE9XXI, K0YW, HB9BBD, F2TU, LX1DB, G4CCH, OZ6OL and F6CGJ. I missed K4QI and HB9SV. I called KA0Y with just 40 W and got QRZ from him. The dish is back in the hall in order to make minor mechanical improvements and then it will be dismantled for transportation to my QTH. I hope to get it operating before summer.

#### **DL5LF**

A HREF="mailto:frank.dobert@gmx.de"> Frank sends a short report from the last SW. I found DX conditions very poor. My sked with Mike, AL7OB was not good. I heard him twice during the previous sked, but never again. I only heard K1FO and DL9NDD - very weak during the SW, but was not heard by them.

#### **F2TU**

Philippe has been active on 5760 as well as 2300 and 1296 -I QSO'd on 6 cm on 3 March F1ANH (539/539), SM4DHN (539/539) for initial #10, OK1KIR (539/549), OE9ERC (44/44) on SSB and VE4MA (339/449), 4 March LX1DB (54/54) on SSB, on 27 March JA7BMB (449/449) #11, on 30 April CT1DMK (527/539) #12 and country 10, and on 5 May 5 random SSB with LX1DB (44/44) and F1ANH (43/43). With circular polar my echoes are QSA 5 all the time. On 13 cm I worked on 4 March SM3AKW (559/559) and (44/44) on SSB, OE9ERC (569/569) and (55/54) on SSB, OE9XXI (54/54) on SSB, LX1DB (55/55) on SSB and WA6PY (339/449). I was on 23 cm for the Eur Contest and made 48 QSOs (10 were on SSB) and 22 sections. On 27 May I plan to be on 6 cm again and hope for many QSOs.

#### **F6CGJ**

Louis (IN78RK) comments on 1296 part of the REF/DUBUS Contest, I started on Saturday morning with very windy weather. It was hard to keep the dish aiming to the moon. In the afternoon conditions became better and in spite of some visitors I found time to be active. On Sunday I found conditions even better with fine weather. 40 stations with 19 multipliers were worked. Among them I had initials with K0BC, KA0YW, DK0ZAB, DL6YDH, HB9BCD and DH5RZ.



The station pretty much still the same with a 8 m dish and 700 W at the horn. My main regrets were missing F1PYR and F8COZ. Both were heard.

#### **F5HRY**

Herve is working on a 2.60 m dish project -- The dish was kindly given to me by F1ANH. The mount is under construction, as well as a readout system and preamp. I should be ready for 23 cm operation within a few weeks. I was on at F6KSY for the Eur EME contest on 3 cm.

#### **F6KHM/P**

Xavier, F5TTU sends the follow information on his groups contest effort -- During the 1st leg of the DUBUS/REF Contest, F6KHM/P was active from SEIGY in JN07qg. Every year since 1990, the French UHFers have met in this little village. On this event F6KHM moved from IN78 with nearly all the needed equipment to make an EME exhibition during the meeting. We were helped by some more friends from central France. They provided the mast, PA and helping hands. It was much work, of course, to assemble and disassemble all the station for just one day. The station was composed of 8 x 8.5 w! BV opt yagis, open wire feed line, MGF1302 preamp, F6007 PA (650 W) and TS790. The antenna was set up without any trouble and the weather was fine with no wind. We switched on Saturday morning for G/CS and sun noise checks. It seemed difficult to find a quiet direction in the sky because of so many running computers, all around. We were, at the least expecting to hear the big guns. When the moon became visible, we worked DL9NDD (449/559), DL9KR (559/559), HB9Q (449/439), OE5EYM (449/O), DL4MAE (449/O), OZ4MM (559/549) and K1FO (559/559). Many other stations were heard. The result of our mini expedition can't be evaluated only by the score. The people gathering all around the station during the assembly and operating periods must also be considered. We never met Murphy during the WE. The main regret was the stations missing from the log . Some of the operators even found time to visit our favorite vine grower in St Romain/Cher. A similar activity could happen next year at the same place and nearly the same period, but on another band with another call sign. Participants were F5TTU, F4CPY, F5MOO, F5NFG, F1AKK, F4DBF, F5CWU and nearly all French "old" EMEers from the F6CGJ group.

#### **F6KSX**

J-Jacques, F1EHN reports on his group's active from JN18AR during the 2nd WE of the Eur Contest on 3 cm EME. We worked on 28 April DL0EF (449/559) for initial #25, OK1UWA (M/O) #26, OK1KIR (M/O), W5LUA (549/539), SM4DHN (549/539), WA7CJO (559/559) and CT1DMK (O/O) , heard DL2LAC (O/-no answer), and on 29 April HB9BHU (O/O) #27, OH2AXH (M/O), LX1DB (O/O) #28, and again DL2LAC CWNR. The operators were F6ECX, F6DLO, F6DLA, F5HRY, F4UPG, David F1SXC and F1EHN. Our station's output power

was 50 W, with a feedline loss < 1 dB to a 3.3 m dish with 47.5 dBi gain, a 0.8 dB NF LNA and F1EHN tracking system. All QSOs were made on random. The random activity was pretty poor during the Asian and Eur window but increased during the NA window in spite of the large number of Eur stations. We regret the rules don't reward random QSOs on the microwave bands. This would probably improve the activity. F6KSX is also QRV on 23 cm but was not active because we selected the 3 cm for operation. We feel it would be better to have 2 WEs for the 23 cm bands and the upper bands to improve the activity in each band.

### **F8COZ**

Philippe, F6ETI reports on his 23 cm EME effort with F8COZ, the mechanical system builder, during 2nd part of the Eur contest from IN87iq. In this their 1st attempt at 1296 EME, they worked 4 stations: OE9XXI (529/439), OZ4MM (529/O), F2TU (519/329) and G4CCH (519/429). They used a 3.1 m dish and only 80 W to a long VE4MA circular feed. Tracking is with a F1EHN/VE1ALQ system. Pictures on this project can be found at:

### **[Project Pictures](#)**

Pse QSL via F6ETI.

### **F/ON5OF**

[Dirk](#) sends his 432 single op QRP REF/DUBUS Contest log. He QSO'd on 31 March at 1158 HB9Q (559/579), 1235 DL9NDD (559/579), 1918 K5JL (554/559), 2201 K0RZ (549/559), 2224 N9AB (559/569), 2233 G3SEK (449/549), 2243 OZ4MM (559/559), 2307 AL7OB (559/559) and 2335 partial F5HRY, and on 1 April at 1124 EA3DXU (559/559), 1212 DL7APV (559/559), 1454 heard JH4JLV, 2108 OE5EYM (559/579) antenna point at roof, 2141 WA4NJP (O/O), 2208 K5WXN (O/O) - EA3DXU as present (?) and 2225 K1FO (549/579) for a total of 14x13 or 18,200 points. The station ERP was 26 dBd with 2 dB of line loss and 450 W out. The antennas was 8 x 11 WL DJ9Bvopt yagis with open wire feed and a 0.5 dB NF LNA from JN33mr in France.

### **G3LQR**

[Stu](#) writes that he has been a little more active the last few months -- During the March/April DUBUS contest I worked on 13 cm the following: DL6LAU, OZ4MM, SM3AKW, OH2AXH, OE9XXI, GW3XYW, and after the contest G3LTF for a total of 12 stations. On 432 I used the old 8 x 27 HB yagis which still need attention. I only contacted HB9Q, OZ4MM and K1FO. During the April contest weekend on 23 cm condx seemed good with good activity. The new feed really makes life better. RX and TX is better. The sidelobes are way down now. I am now hearing something from HA5SHF whom I have not been able to hear before. Even to east with tropo tower in front of the dish, I can still hear stations. Stations QSO'd were OE9XXI, G3LTF, G4CCH, JH5LUZ, SM3AKW,



OH2AXH, OZ6OL, F6CGJ, F2TU, OZ4MM, DH9FAG, N2IQ, DK0ZAB, K4QI, JF3HUC, HB9SV, HB9BBD, OE5EYM, DH5RZ and K5JL. Lots of others heard but all very busy with the high activity. My initial count to date is #82 - not sure how many DL stations are the same. I need to trim trees to extend my west window to get some W7 stations. I do hear W7GBI quite often. Rained all Sunday so unable to use camera for tracking, but the echoes are now good enough to keep the dish on moon. It's a different story on 13 cm where I really need to see the moon. Work on 9 cm is progressing slowly, but I hope to check sun noise this month to see how the dish works. The system is now working on both 3400 and 3456 MHz. I just need a good preamp and to get a 20 W SSPA working to try for echoes.

### **G3LTF**

Peter was active on 23 cm for the SW and worked several new stations – I QSO'd on 28 April between 1300 and 2240 OZ4MM, DL1YMK for initial #172, G3LQR, OE9XXI, JA6AHB #173, DK0ZAB #174, DH9FAG, OZ6OL, OH2AXH, G4CCH, HB9BBD, F2TU, DK0ZAB – last 4 all on SSB, HA5SHF, K0YW also on SSB, W7SZ, K4QI, VE6TA, KA0Y and W2UHI, and on 29 April between 1300 and 2130 JA4BLC, JF3HUC, F5AQC on SSB, OE5EYM, F6CGJ, HB9SV, HB9BCD #175, DH5RZ #176, K2DH, K5JL, SM3AKW and W7QX. CWNR was DL4MEA. I also made some 2320 QSOs outside the SW. I contacted on 4 April DL6LAU for initial #17 and on 30 April OK1UWA #18. I am convinced that my 13 cm system is under performing. I believe I'm about 7 dB short on echo strength and about 5 dB short on sun noise. I did an interesting test in reducing power on 23 cm until my echoes were the same strength as on 13 cm. If the noise temperature of the RX is the same for both bands then for the same dish dia you should need about 5 dB more power on 23 cm, I found I needed less - indicating a 7-8 dB shortfall in performance. The dish BW measures 1.9 degs (theory 1.5 degs) and the NF measures 0.6 dB on the latest Agilent hardware... Investigations continue! I wonder if anyone else has done the same test?

### **HB9BBD**

Dominique was active on the 2nd part of the Eur Contest -- During the DUBUS Contest I worked the following on 23 cm on 28 April at 0856 JA4BLC (549/579), 0905 JA8IAD (39/579), 0910 JH5LUZ (579/589), 0913 JF3HUC (589/559), 0954 DK0ZAB (549/579), 1018 HB9SV (599/599), 1024 OE9XXI (589/589), 1034 SM3AKW (579/579), 1102 JA8ERE (569/579), 1117 DL1YMK (519/559) for initial #158, 1127 JA6SLC (569/569) #159, 1150 JA6AHB (569/569) #160, 1156 OZ6OL (589/579), 1202 DL1YMK (539/569) #161, 1208 F1PYR (569/559) #162, 1212 JA6CZD (579/579), 1238 F2TU (589/579), F2TU (57/55) on SSB, 1249 OE5EYM (589/569), 1258 I0UGB (54/55) on SSB, 1603 S59DCD (569/579), 1613 G4CCH (56/57) on SSB and 1613 G3LTF (55/57) on SSB - then I had to run to go out and could follow-up until the next morning, and on 29 April 0920 I0UGB

(56/59), 0926 F2TU (569/579) and (55/55) on SSB dupe, 0954 DL4MEA (549/539), 1033 F5PL (569/589), 1120 HB9MPU (519/599) #164 (Rene in JN47hd is using a 2 m mesh dish, a TH308 300 W and circular pol. Rene is located about 12 km from here in direct sight. So an EME QSO with him is hard. We tried on Saturday with readability on HB9MPU's side only. The Doppler was at the time less than 1 kHz. Furthermore, my dish was kind of shooting at him of the cliff! On Sun we tried again. with the Doppler at 2.7 kHz and our antennas nicely offset. He could easily read me even in SSB while I needed 50 Hz bandwidth to copy him Q5. Rene and Franz (2nd op) will enhance the system further to do more EME in the future. After the QSO we all had Champaign at my place) - 1142 LX1DB (589/589) and LX1DB (59/59) on SSB, 1203 F6CGJ (579/589), 1228 OZ4MM (589/589), 1435 F5PAU (579/579), 1718 HA5SHF (539/579), 1734 K4QI (559/569), 1752 DH5RZ (569/579) #165, 1809 K0YW (589/599), 1814 K5JL (589/599) goo?, 1820 SM3AKW (dupe - in very high speed CW), 1822 K9BCT (569/579), 1830 W7BBM (569/559) #166, 1845 VE6TA (559/579), 1907 F5AQC (57/55) #166, 1928 G3LQR (569/579), 1938 HB9BCD (549/569), 1947 DH9FAG (569/559), 1954 K2DH (579/589), 2003 DJ5MN (52/53) on SSB and 2016 W7QX (529/569). I also had an incomplete QSO with someone ...COZ?

#### **IK2MMB**

[Sergio](#) writes that he could not be on for the 2nd part of the REF/DUBUS Contest because of a business trip to W6. This is the 2nd SW he has lost this year.

#### **K0YW**

Bruce reports that 9H1ES was about 5 kHz low during his 1296 skeds, but he worked him ok. Nil was copied from WA9FWD. Bruce ended with a score of 49x26 for 125,600 points plus 1 multiplier on sked that doesn't count for points. His total included 2 new countries (9H1ES and S59DCD) plus 11 initials. His initials total is now 99.

#### **K4EME**

[Cowles](#) writes -- I tried to work YO2IS again as scheduled on 28 April, but did not hear him at all. I did copy my own echoes very loud, however Faraday rotation may have played a part in not hearing him. I worked N9AB before my schedule and I worked W4ZRZ at 1730 right after the schedule with no problems. I am interested in additional skeds. I have a list of stations worked on my Home page [home.rica.net/candrus](http://home.rica.net/candrus).

#### **K4QI**

[Russ](#) reports on his April activity -- On 29/30 April on 1296 I worked I0UGB, DH9FAG, G4CCH, SM3AKW, OE9XXI, KA0Y, OZ4MM, DK0ZAB, K0YW, S59DCD, F6CGJ, VE6TA, HB9SV, OZ6OL, W7SZ, W2UHI, W7BBM, K2UYH, N2IQ, F2TU, WA4NJP, LX1DB, K2DH, K9BCT, G3LQR, DL1YMK, W7GBI, G3LTF, W7QX, JA6CZD, JA8IAD, JH5LUZ, JF3HUC, JA4BLC, JA6AHB,

**F5PL and HB9BBD. I put some effort into Saturday, but was on only for a few minutes on Sunday afternoon. I now have a prop pitch motor drive on the polar axis in my dish, which will allow operation in more windy conditions. The drive is servo'd to a mechanical lunar clock.**

#### **K6JEY**

**Doug DM03wt is now hearing echoes off the moon on 70 cm I heard my 1st echoes from the moon. They peaked quite nicely running about 1,100 W. It is quite a thrill. Since you are receiving your own signal, can you QSL yourself? (Hi) My wife sent her initials and heard them come back and was quite excited. I tested with AL7OB. Conditions were not as good but we managed to play with polarization, pointing and tracking. It was fun. I hope to be organized for the next activity SW and set aside a good amount of time for operating. I am also thinking about a portable station for 1296. I have everything working except the antenna. Any suggestions? [A 10' stress dish can be built in a few hours.]**

#### **K8VP**

**Bill has his complete 432 EME station up for sale -- Due to very little time to operate and changes in direction in my amateur radio activities, I have decided to sell my 70 cm EME set up. The equipment consists of 16 x 14 el 3.6 wavelength rear mount yagi antenna with open wire feedline and a Ham-M for pol rotation, mounted in a Rohn 25 tower section. The power dividers, phasing lines, prop pitch motor for azimuth rotation, 8938 amplifier built by W8YIO that has Eimac tube socket and is operational with Variac Power supply on both high voltage and filaments are all included. I will sell as package for \$US2000.**

#### **KA0Y**

**Ken was active on 1296 during the 2nd part of the Eur contest. He made 26 QSOs and added 6 initials during the weekend. He was hearing 9H1ES (549) and also confirms that Fortunado was 5 kHz low in Freq.**

#### **LX1DB**

**Willi sends info on his current He is QRV for EME operation on 144, 432, 1296, 2304, 3456, 5760 and 10,368. He uses a 10 m dish for 432, 1296, 2304 and 3456, a 6 m dish for 5.6 and 10 GHz. The dishes simultaneously track and can operate at the same time. His 13 cm PA has 280 W out. [No info on his other Pas was provided.] During the contest weekend DL0EF was worked (559) - no problem. On 1296 he made at least 38 QSOs, but says his DSP cannot keep up with K5JL's hi speed CW. It has too much ringing.**

#### **OK1KIR's**

**April 2001 EME report -- In the 2nd part of the REF/DUBUS EME Contest on 1296 we QSO'd on 28 April at 0950 OE9XXI (569/559), 1554 DH9FAG (449/449), 1636 F2TU (549/559), 1641 G4CCH (559/559), 1717 DK0ZAB (449/449) for initial**

#186, 1935 HB9SV (569/559), 1941 SM3AKW (549/549), 1950 OZ4MM (569/559), 1954 K0YW (559/549), 2015 VE6TA (O/O), 2021 F6CGJ (559/559), 2040 W2UHI (559/449), 2044 OZ6OL (549/559), 2050 DL1YMK (439/559) #187, 2101 W7BBM (O/O) #188, 2117 W7QX (439/439), 2128 LX1DB (579/569) and 2134 KA0Y (579/559). That's all! A little while later our main HV 3 phase transformer threw in the towel. We are now closed down on 70 cm through 13 cm until we repair a short circuit discovered inside one of the transformer's windings. This is a bloody job on our 80 kg honey! We'll try to fix it ASAP, but it will take some time for sure. On 1296 we heard DH0AOH (CWNR), G3LQR, HA5SHF, HB9BBD, I0UGB, JA8IAD, JF3HUC, K2DH, K2UYH, K4QI, OH2AXH, S59DCD and W7SZ. Nil was copied in skeds with F1OAT, F1PYR and 9H1ES. On 10,368 we QSO'd on 28 April at 1255 DL0EF (449/439) for initial #15, 1330 OK1UWA (O/O) for initial #16 and DXCC 13 and 1410 F6KSX (O/M). We heard HB9BHU, SM4DHN and WA7CJO. We suffered from a problem in our transverter on Sunday. We were gradually losing G/CS and moon noise. The 1st LNA stage PHEMT went slowly down to a total short circuit. A new one was installed, but too much time was lost on the repair. We missed all our skeds. When we recovered there was nobody to respond to. During the next SW we limited to activity on 3 or 6 cm and are looking for skeds.

#### **OK1UWA**

Josef in JN69qt is QRV on 3 cm with a DB6NT 144/10368 MHz transverter, NE32584D 0.68 dB NF LNA (0.92 dB at feed and 1.8 dB of moon noise), 35 W out from 2 x TIM1011-15 for 33 W at feed. Cable loss is from 7 cm of waveguide. The equipment is installed at the focal point of a TVRO dish with a HB linear pol radiator. Further details can be found at:

#### **OK1UWA details**

#### **OZ4MM**

Stig found conditions good on 1296 during the 2nd part of the Eur contest -- I had placed dipoles for 144 in the dish. This caused some scattering of signals from the 23 cm feedhorn. Activity was fair and I feel normal for the contest. I worked some initials: JA6AHB (539/559) #180, DL1YMK (529/559) #181, DL4MEA (529/549) #182, F8COZ (O/529) #183 and DH5RZ (549/0) #184. I don't know the status of F8COZ and DH5RZ and am assuming they are initials for the present. My total in the 1296 contest leg was 45. Gotaways were KA0Y, W5LUA, DJ9YW and DJ5MN. Beside operation on 1296, I spent several hours on 144 and worked 23 stations with a temporary setup.

#### **OZ6OL**

Hans was QRV on 23 cm only for the 2nd part of the Eur contest -- I QSO'd 41 stations on random and found condition good. They were stabile on Saturday, but QSB increased and signal level was lower on Sunday. Worked were

HB9BBD, OE5EYM, OZ4MM, F2TU, DK0ZAB, JF3HUC, SM3AKW, OH2AXH, OE9XXA, HB9SV, G3LQR, F6CGJ, G3LTF, DH9FAG, S59DCD, HA5SHF, G4CCH, W2UHI, KA0Y, K4QI, K2UYH, K2DH, K0YW, LX1DB, OK1KIR, W7QX, VE6TA, W7SZ, DL1YMK, W7BBM, W7GBI, I0UGB, JH5LUZ, JA4BLC, JA6AHB, F5PAU, F5PL, DH5RZ, K9BCT, K5JL and F5AQC.

#### **SM3AKW**

[Karl](#) reports on the 2nd part of the Eur contest I found very nice 23 cm activity on Saturday and made 41 QSO's, but sunday was boring. I just added 9 new ones although I CQ'd most of the available moon time. I worked on 28 April at 1007 F2TU, 1013 DK0ZAB, 1017 JH5LUZ, 1020 JF3HUC, 1034 HB9BBD, 1049 JA6AHB, 1111 JA4BLC, 1113 HB9SV, 1118, JA6CZD, 1125 JA8IAD, 1213 DLIYMK, 1230 OZ6OL - QRO?, 1237 HB9Q, 1245 OE5EYM, 1315 F5PAU, 1332 G4CCH, 1349 G3LQR, 1359 OE9XXI, 1403 G3LTF, 1413 OH2AXH, 1521 DH9FAG, 1556 S59DCD, 1639 HA5SHF, 1651 F6CGJ, 1704 K0YW on SSB, 1712 VE6TA, 1726 I0UGB, 1740 K4QI, 1745 K2UYH, 1755 W7SZ, 1813 KA0Y, 1857 WA4NJP, 1911 W7BBM, 1918 K9BCT, 1925 N2IQ, 1941 OK1KIR, 2023 W7GBI, 2037 LX1DB on SSB, 2043 W5LUA, 2053 DL6YDH and 2106 W2UHI, and on 29 April at 1125 F5PL, 1134 OZ4MM, 1613 HB9BCD, 1731 DH5RZ (new initial?), 1849 K5JL, 1918 F5AQC on SSB, 1948 K2DH, 2038 W7QX and 2129 DJ9YW for a score of 50x26. Also heard were JA8ERE and DL4MEA.

#### **SM4IVE**

[Lars](#) sends a status report on his progress toward becoming QRV again -- I have started to Mig weld the ribs to a new dish. They are VERY heavy so I must rebuild my tower and el system. They still have to be galvanized. Also a new center hub has to be fabricated along with the feed support and so on. I don't expect to be ready before winter. There is so much other stuff to do too. I will post my progress on my Web page at:

#### **[SM4IVE WEB page](#)**

#### **S57UUU**

[Marko](#) reports on his 3 cm contest efforts -- Two days before the contest weekend, I arranged my other duties so that I could be QRV on 10 GHz for the DUBUS contest. I had skeds with OK1KIR and CT1DMK. But on Saturday morning the TX just did not want to play. After a few tries, I found that one of the banana plugs on my HV extension cable had become loose and was in contact with another wire. After fixing that the TWT would run for a second or two and then quit. After checking for moisture, too much drive, etc., I discovered that the collector transformer was not functioning properly - so the game was over for this contest! I quit at about 1400, well before the NA window. While fiddling with my TX, I kept an ear on the RX and heard SM4DHN, OK1KIR, DL0EF and

**HB9BHU**. I even heard **DL0EF** calling me **FRUSTRATION!** This was my 4th or 5th failed sked with **OK1KIR**. Did somebody put a voodoo curse on us? I am becoming superstitious. Both my sked partners said they would use linear pol, so I put my linear feed on this one more time. I noticed a big variation in **DL0EF**'s signal level. I suspect he was probably rotating his pol? It could also have been imperfect moon tracking on TX - that is my problem with overcast skies. Because I can hardly find any time for HAM activity these days and I **HATE** winding transformers, I will probably be QRT for some months.

#### **VE1ALQ**

Darrell's recent operating has been limited by system problems (the hybrid module in his **DEMI** xvtr failed) and other commitments. He has been very busy, but is back up and running on 6 cm and will be available on that band until he switch over to 3 cm, hopefully in a couple of months.

#### **VE6TA**

Grant is QRV on 23 cm with new PA, but it is a bit drive starved and is only putting out 350 W. During the contest he was on 23 cm and had problems with the wind. He worked 23X18 with 3 initials, but notes that activity during his Asian window was not good.

#### **VK4AFL**

Trevor was QRV on 70 cm during the last SW. Conditions seemed very poor with only three stations heard/worked: **K1FO**, **K5WXN** and **N9AB**. All were Q5 but down in strength. My sun noise was 7 dB more than usual. The EU window produced not one signal.

#### **W2UHI**

Frank had a good time in the REF/DUBUS Contest on 1296. He ended with 26 QSOs. He reports hearing 9H1ES and confirms that Fortunado was running 5 kHz low. He called but never heard a reply. Later he worked **DK0ZAB** for an initial. Frank is working on a new feed for 23 cm, a modified **VE4MA** horn.

#### **W5LUA**

Al worked **W6HD** on 3 cm and has made a little more progress on 24 GHz tropo. He has received about 15 CDs from the EME 2000 Conference. Those interested in acquiring one of these CDs contact him.

#### **W7SZ**

Larry writes I worked the 1st day of the Euro Contest on 1296 and made 18 contacts including one initial. QSO'd were **OE9XXI**, **K0YW**, **SM5AKW**, **W2UHI**, **OZ4MM**, **F6CGJ**, **F2TU**, **N4QI**, **G4CCH**, **K2DH**, **LX1DB**, **OZ6OL**, **DK0ZAB** for the initial (#), **KA0Y**, **G3LTF**, **VE6TA**, **W7QX** and **W7GBI**. Also heard **JA6CZD**, **JA5CZH** (?) and **HB9SV**. The next day I moved to 10 GHz. I also moved from my



12'dish to 10 footer for improved pointing stability. I am building a VE1ALQ system for better tracking. I heard WA7CJO 20+ dB over the noise a BIG signal.

#### **WA4NJP**

Ray worked a new country on 432, BY4BJA. This is the 1st first NA/BY QSO on 432. BY4BJA is running 100 W to 4 #720 Create yagis. During the QSO he used no antenna preamp, just a raw FT736R. He is working to improve the station and should be available for skeds shortly. On 23 cm Ray did not do too well, he worked W7BBM and JA7BMB but all others were lost. He now has WAC on 23 cm.

#### **WA6PY**

Paul was on 3 cm for the contest -- On 29 April I replaced the feed horn with one having a lower radiation angle. I also played with PTFE corrective lenses in the front of the dish. I could not get more than 0.5 dB of improvement in Sun noise. The lens spoiled the return loss of the feed, so I decided to do not use one. I heard traces of CT1DMK and DF0EF. I QSO'd WA7CJO (O/M) and had good copy from W5LUA during our sked, but Al could not hear me. I also heard an SSB QSO between WA7CJO (100% copy) and W5LUA (traces of signal). I will work on repairing or replacing the dish, and expect to have a better signal next time.

#### **WA7CJO**

Jim is still running linear pol, but is considering a change. He worked 7 stations in the contest. OH2AXH was not heard, but Jim has worked him before. He QSO'd DL0EF for initial #45 on 10 GHz. Jim is also playing around with 24 GHz. He hopes to have a 100 W amp on 24 GHz to replace 12 w one now in use.

#### **ZS6AXT**

Ivo is recooperating after his operation -- Unfortunately I did not manage to participate in the 2nd DUBUS Contest. I was unable to get somebody to help me mount my 6 cm horn. I still cannot put the modified feed horn back on the dish myself. I am a bit scared that I may damage my back after the operation. But I am getting back close to normal. During my stay in bed I had a lot of time for thinking about various problems, one of them being the circular/linear pol, and here is what I concluded: During my 1st few QSOs on 6 cm with linear pol (LP) there were few signals with heavy frequency spreading (FS) and a few with clear CW tones. I then I changed to circular pol (CP) and all signals were without any FS! Even my QSO with OE9PMJ, whom was using LP, was without FS. During some previous discussions about this problem on MOON-NET I received email from a W station that observed that even on 2 m EME there are sidebands on the reflected signals when the polarization is not aligned to zero. I think it is quite clear that when there is pol misalignment, sidebands are present on the reflected signals. I do not have means to further examine this phenomenon, but stations who can vary continuously their LP could probably try it - K1FO on 70 cm. Such

tests will then put more light onto this phenomenon. In my case on 6 cm, I worked OE9ERC with LP-LP and heavy FS, so that I could not read his SSB, while a QSO with OE9PMJ with LP - CP was with clear CW tone. In both cases this was on the N-S path. In the 2nd case, my CP horn obviously eliminated any pol discrepancy for the price of a 3 dB loss. However, Peter's signals were still strong. Other QSOs with F2TU and F1ANH were CP-CP with no FS at all. Clear CW tone certainly helps a lot with the readability of weak signals, especially on SSB, never mind that CP will eliminate the need for adjustments of the LP polarity for different stations, by eliminating the spatial pol problem. Even the 3 dB loss for CP-LP QSOs may be thus accepted. I hope in view of the above that all stations will ultimately go circular. I am sure that our antenna gurus will soon design CP horns for different f/D dishes. In my opinion it is really worth it. During an initial period some stations may still use LP, but CP should be the standard. Those who have access to IARU officials should convince them to change the present impractical and out-of-date EME standards to CP for all bands above 13 cm. In meantime we will change to it anyway. I use CP on 6 cm and as soon as I get to 3 cm, I will be on with CP there too. [I want to indicate my complete support of CP as the EME standard for the microwave bands, but for reasons other than that pol misalignment causes sidebands. My observations on 432 do not support this concept. I suspect the sidebands are geometry related, but can be caused no matter what the pol angle.]

### **K2UYH**

We again had a conflict during the SW/2nd Eur contest weekend. I forgot the SETI League was running their conference at my college... and I had to be there to keep the doors open. I arranged for KC2TA to operate my station for a few hours, and I was able to get on for a short time at the start (during a lunch break) and after the end of the Eur window. Nil was heard during our skeds with F1PYR and F1OAT, but DH0OAH was easily worked. 23 cm QSOs on 28 May were at 1712 F2TU (559/559), 1747 SM3AKW (559/559), 1754 G4CCH (559/529), 1805 DH0OAH (559/559) for initial #186, 1819 DK0ZAB (559/439) #187, 1833 K0YW (559/549), 1854 OZ4MM(569/549), 1901 K2DH (559/559), 1909 K4QI (559/549), 1917 N2IQ (569/559), 1923 OZ6OL (559/449), 0158 W7QX (449/559), 0224 WA4NJP (449/559) and 0239 JA6CZD (559/559). The situation does not look good for the May SW. I will be returning from a Microwave conference in Phoenix and will not be back until Sunday. It is possible the LU6LW, who is now temporarily staying at my QTH may be able to operate in my absence.

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## **NETNEWS**

by

[G4RGK, DAVID DIBLEY](#)

**RA3LE** worked on 70 cm in the contest initials with DL4MEA, W7CI and KA0RYT.

**RW3PF** worked on 70 cm in the contest an initial with HB9Q. UA3PTW scored on 70 cm in the contest 28x20. He finished his new 70 cm 8 yagis array with open feed in time for the contest.

**DK3WG** was QRV 70 cm in the contest for a short time, but no initials.

**IW4BTJ** has a new email address [nmasotti@galactica.it](mailto:nmasotti@galactica.it). Nino could not be on 3 cm for the contest because of a conflict with work.

**K3PGP** has a new email address and John's Web site is now at:

[K3PGP WWEB Site](#)

**K6JEY** is now getting 1.1 kW from his 8938 PA and is looking for skeds on 432.

**WA5TKU** has a new email address [WA5TKU](#)

**VE6NA** was away on vacation and missed the last SW.

**K6IBY** recently had cataract surgery and should be back on the air soon as he has his new PA for 70 cm is up.

**W4OP** is concentrating on 23 cm. He has 13.5 dB of sun noise. He is not yet QRV on 10 GHz.

**K5WXN** was not on for the SW. During last SW (1st part of the contest) he had problems with Faraday and knowing where to set his pol. At the end of April, Dan worked VK4AFL and a partial with KU4F he had the call wrong.

**KA0RYT** is still QRV on 70 cm with 8 yagis. He is currently playing with preamps - most are below 0.2 dB NF.

**WB0GGM** has a new address. Change "Route 1 Box 71" to "17593 334 Street". His email is still [WB0GGM](#) John heard W7MEM and chased IN3AGI with no luck.

**W7CNK** 10 GHz AZ drive froze up. When it is repaired, he will be QRV with 32 W at the feed of a 5 m dish.

**K5UGM** has a 10' dish and is working on 23 cm EME. He needs ideas for a dish

mount.

**PA3CSG.** is looking for 3 cm skeds. He was not active in the contest on 10 GHz because of power supply problems.

**NL7F.** has problems with his el drive and is presently QRT.

**W7MEM's.** 70 cm QSO with N9AB was NG. He heard nil from WB0GGM and did not complete with AL7OB.

**WB4BKC.** is working on finishing the feed and the el drive for his dish. NU7Z is still QRT on 5.7 GHz.

**WA9FWD.** is still QRT on 70 cm, but is QRV on 23 cm.

**N0KE.** will be in YN, YS, HR in May with a 5 wavelength yagi and 350 W. [Any info on 70 cm EME skeds?]

**WA1JOF.** working on a new 1296 PA. He has some problems but is getting 400 + W out.

**LU8EDR.** has not been feeling well and was on the air during the SW.

**DK0ZAB.** is operated by DL4DTU and using a 10 m dish and 120 W from JO61cu.

**.W7QX.** had a good time on 23 cm worked 7 stations. Willy is now up to 55 initial.

**W7DSA.** in OR is working to get QRV on 23 cm. Arnie is W7SZ's neighbor just across the Columbia River. He has a 16' dish and 100 W PA. He hopes to be QRV this summer.

**K5JL.** has finally located his 1296 PA problem. It was leakage in the trapezoidal grid bypasses. Jay is working on a replacement assembly. He is currently measuring 24.3 dB of sun noise on 23 cm.

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## FOR SALE

WA9OUU has **a 1296 amp 1 kW out with 10 w in.** Complete operational system or separate details at: [Details](#)

K8VP has **Va complete 432 EME station for sale, see Bill's report above for**

**details.**

**W8TN has 7 7289's for sale at \$US35 each. They have never used and were made by GE.**

**W7CNK w7cnk@worldnet.att.net has. a DEMI 432/28 transverter for sale. Lucky also still has some 432 LNAs left.**

**VE1ALQ . has phase lock LO boards and a replacement 23 cm power module available..**

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## **TECHNICAL**

**WA2PHW has been playing with the Linux based SM5BSZ virtual DSP radio. It is available from the SM5BSZ WEB site at:**

**[SM5BSZ WEB Page](#)**

**[US Mirror](#)**

**He feels it may have value for EME operation. It is available only in the weak signal CW mode.**

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## **FINAL**

**W7GBI, Charlie is recovering from a heart attack he suffered on 12 May. He is doing very well and should be out of the hospital before you read this. He will probably be under orders to take it easy for a bit. (I wonder how long that will work).**

**KD4LT has a change of e-mail address for those receiving NL in near future, but be advised there may be some duplicates. Please be patient. Also if you do not receive NL drop Scotty an email with your current Email address and your old one.**

**I am sorry, but I am again having trouble finding the time to do the type of job I would like in producing this NL. I had family complications last weekend and thus I am running nearly a week behind schedule. Hopefully I will be able to catch up next month.**

**73, Al - K2UYH**



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## EME Schedules

26 MAY

Time	432.040	432.045
1700z	WBOGGM-UA9FAD	
1730z	WBOGGM-RA3LE	
1800z	WBOGGM-IN3AGI	N1BUG -PA3CSG
1830z	WBOGGM-K6JEY	N1BUG -IN3AGI
1900z		N1BUG -N2IQ
1930z	WBOGGM-W7MEM	N1BUG -K2UYH
2000z	WBOGGM-W4ZRZ	N1BUG -K0RZ
2030z		N1BUG -KD4LT
,		

27 MAY

Time	5760.100	10368.075
1200z	F2TU -RW3BP	OK1KIR-OH2AXH
1230z	F2TU -DF3RU	OK1KIR-DL2LAC
1300z	F2TU -I6PNN	
1330z	F2TU -OH2AXH	
1600z	F2TU -VE1ALQ	
1700z	F2TU -WA5ICW	
1900z		OK1KIR-WA6PY

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[Netnotes by K1RQG](#)

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[Rein, W6/PA0ZN](#)

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